

PATENT SPECIFICATION



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PROVISIONAL SPECIFICATION.

Brakes of and for Self-propelled Vehicles.

We, MORRIS COMMERCIAL CARS LIMITED, a Company incorporated under the Laws of Great Britain, and WILLIAM WILSON HAMILL, a subject of the King of Great Britain, both of Foundry Lane Works, Soho, Birmingham, do hereby declare the nature of this invention to be as follows:—

This invention comprises certain improvements in or relating to brakes of and for self-propelled vehicles and it has for its object to provide a more satisfactory connection between the brake shoe and the material with which it is faced.

Said brake shoes are usually made of metal with a lining or covering of friction material attached thereto by rivets.

According to the present invention, the surface of the metallic shoe is provided with projections adapted to enter the substance of the friction material and thereby assist in transmitting the re-active stresses set up when the brake functions.

In embodying our invention, the projections on the surface of the brake shoe may be of any shape or arrangement appropriate for the purpose in view and may consist of transverse serrations of inverted V section or of buttress section i.e. with one flank inclined say at an angle of 30° and with the other flank inclined say at an angle of 60°, the steeper side facing towards the direction

of rotation of the brake drum whereby the major stresses which are set up by braking on an automobile road wheel when the vehicle is running forward are taken by the steeper side.

If desired the serrations may be of V shape to increase the surface area in contact with the friction material.

In lieu of transverse continuous serrations, the projections may be of pyramidal or isolated or segregated form arranged in rows paralleled or staggered or in a V or sinuous configuration.

Pressure set up between the friction material and the brake drum may be utilised to press the projections into the friction material, but it is preferred to use extraneous pressure means for pre-seating the friction material, with the addition of heat, when desired, in the case of those friction materials which incorporate bitumen or agents which soften under the influence of heat.

The projections may be in lieu of or in addition to the usual rivets.

Dated this 16th day of July, 1928.

MORRIS COMMERCIAL CARS LIMITED,

WILLIAM WILSON HAMILL,

By Wm. A. Davis, A.M.I.Mech.E.,
Patent Agent for the Applicants.

COMPLETE SPECIFICATION.

Brakes of and for Self-propelled Vehicles.

We, MORRIS COMMERCIAL CARS LIMITED, a Company incorporated under the Laws of Great Britain, and WILLIAM WILSON HAMILL, a subject of the King of Great Britain, both of Foundry Lane Works, Soho, Birmingham, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention comprises certain improvements in or relating to brakes of and for self-propelled vehicles and it has for its object to provide a more satisfactory connection between the brake shoe and the material with which it is faced.

Such brake shoes are usually formed in the shape of a metallic segment with a lining or covering of friction material attached thereto by rivets.

According to the present invention, the surface of the metallic shoe is provided with integral projections adapted to enter the substance of the friction material and thereby assist in transmitting the reactive stresses set up when the brake functions.

In order that this invention may be

clearly understood and readily carried into practice, we have appended hereto a sheet of drawings in which:—

Fig. 1. is an illustration of a brake shoe according to the present invention.

Fig. 2. shows the application of the invention to a brake shoe made of pressed metal.

Figs. 3 & 4 are enlarged fragmental views of a portion of a brake shoe according to our invention.

In a convenient embodiment of our invention such as illustrated in the drawings, the brake shoe may be of customary form consisting of a curved section *a* shaped to a cylindrical configuration similar to that of the interior of the brake drum, and two more or less parallel arms *b* *c* integral therewith. The arm *b* is adapted to receive movement from a cam or similar device, while the arm *c* functions as a fulcrum about which the brake shoe is adapted to rock. On the outer surface *d* of the curved part *a* of the brake shoe, transverse serrations *e* of inverted *V* section or of buttress section i.e. with one flank *f* inclined say at an angle of 30° and with the other flank *g* inclined say at an angle of 60°, the steeper side facing towards the direction of rotation of the brake drum whereby the major stresses which are set up by braking on an automobile road wheel when the vehicle is running forward are taken by the steeper side.

If desired the serrations may be of *V* shape to increase the surface area in contact with the friction material.

In the application of our invention to a cast aluminium brake shoe, the serrations may be machined or die cast while when a pressed steel shoe is used, the serrations may be formed by the dies in the process of pressing the shoe to shape.

In lieu of transverse continuous serrations, the projections may be of pyramidal or isolated or segregated form arranged in rows parallel or staggered or in a *V* or sinuous configuration.

Pressure set up between the friction material and the brake drum may be utilised to press the projections into the friction material, or extraneous pressure means for pre-seating the friction material, with the addition of heat, when desired, may be used in the case of those friction materials which incorporate bitumen or

agents which soften under the influence of heat.

The projections may be in lieu of or in addition to the usual rivets.

We are aware that it has been proposed to secure a brake block to the brake shoe by means of a clip or clip-like device provided with tongues adapted to enter the block or lining and with tongues adapted to be bent round the shoe or plate or other carrier, whereas our invention is distinguished therefrom by the provision of integral projections on the surface of the metallic shoe.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. A brake shoe for a self-propelled vehicle having a series of integral projections adapted to enter the substance of the friction material for the purpose described.

2. A brake shoe for a self-propelled vehicle having a series of transverse integral projections of buttress-formation.

3. A brake shoe for a self-propelled vehicle having transverse integral serrations with flanks inclined at different angles one of which is steeper than the other.

4. A brake shoe for a self-propelled vehicle having integral projections of pyramidal or isolated form arranged in rows.

5. A brake shoe for a self-propelled vehicle comprising a metallic shoe with transverse integral projections to which is applied a covering of frictional material adapted to conform to the external surface of the shoe by pressure and heat generated during the working of the brake.

6. A lining or covering of friction material furnished with or adapted to be formed with depressions to match projections formed on the brake shoe according to any of the preceding claims.

7. Brake shoes for self-propelled vehicles substantially as herein described or illustrated.

Dated this 15th day of April, 1929.

MORRIS COMMERCIAL CARS
LIMITED.

WILLIAM WILSON HAMILT,
By Wm. A. Davis, A.M.I.Mech.E.

[This Drawing is a reproduction of the Original on a reduced scale.]

